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# Infection Prevention in Patients Receiving Continuous Renal Replacement Therapy through Proper Hemodialysis Line Care

Nicole Ingram, BSN, RN, CNN, CNIV and Susan McKenna, MSN, RN, CNIII;  
Acute Hemodialysis

## Purpose

- Understand and remove barriers to Tego™ luerlock connector use and proper hemodialysis (HD) central line care while decreasing the rate of Continuous Renal Replacement Therapy (CRRT)-related central line-associated blood stream infections (CLABSI) across adult Intensive Care Units (ICU).

## Background

- Central venous catheters (CVC) identified for dialysis use are recognized as distinct from other CVC accesses; these lines should only be de/accessed by recognized dialysis nurses or nurses who have completed specific competencies.
- CLABSIs are linked to higher morbidity, higher mortality, and increased healthcare costs. ICU patients receiving CRRT are at a greater risk as they are prone to clotting, increasing the need to deaccess and reaccess the patient's CVC during therapy.
- August 2017: Tego™ luerlock connectors were implemented to aid in safety and prevent CLABSIs among HD patients
- Summer 2018: Dialysis team observed inappropriate HD line care in adult ICU patients receiving CRRT paralleled by an increase in CRRT-related CLABSIs.

## Data and Evidence

### Inconsistent practice surrounding Tego™ connector use:

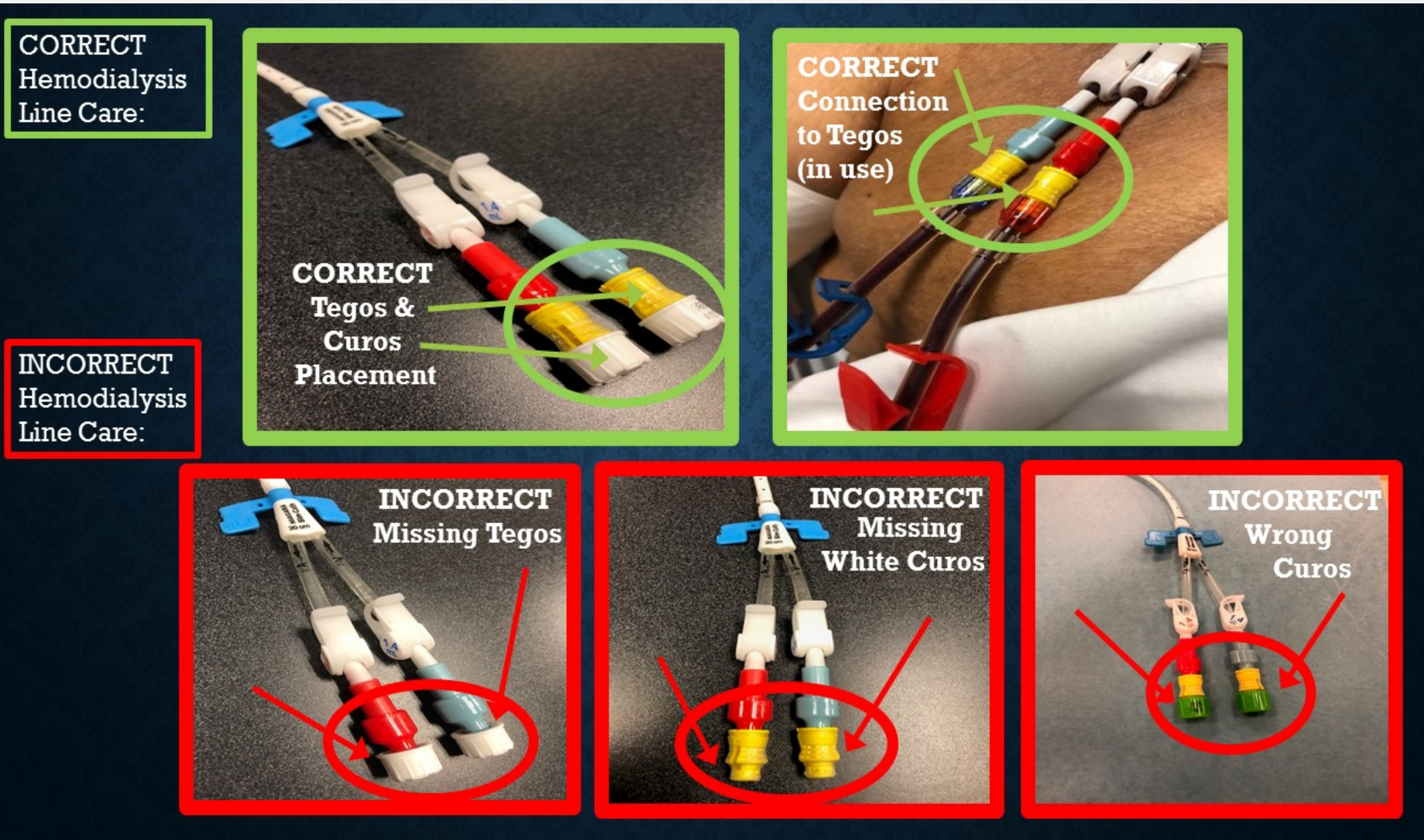
- Absence of Tego™ luerlock connectors, use of incorrect Curo™ caps, inappropriate use of syringes dwelling on CVC

### Influential Factors:

- Lack of supplies vs. lack of knowledge of supplies
- Limited knowledge of educational resources
- High staff turnover rates requiring frequent re-education

## Implementation

Tego™/Curo™ Correct Use Diagram in CRRT Toolkit



### Intervention and Implementation:

- Creation and implementation of Tego™ Toolkit emphasizing proper HD line care in the ICUs
- Laminated signage placed on all adult CRRT machines accompanied by bag of appropriate supplies; initiated August 2018
- Presented to multiple Shared Leadership Councils and Key Stakeholders: Education Leadership, Critical Care Practice, Champions of Health System Infection Prevention, Clinical Coordinator Committee
- Presented at hospital-wide CLABSI Education Station: July 2019
- Weekly audits to measure Tego™ connector and HD line compliance paired with real-time one-on-one education at the bedside
- Trending of CRRT-related CLABSI rates alongside Infection Prevention division; a drill down is completed with the report of any HD CLABSI

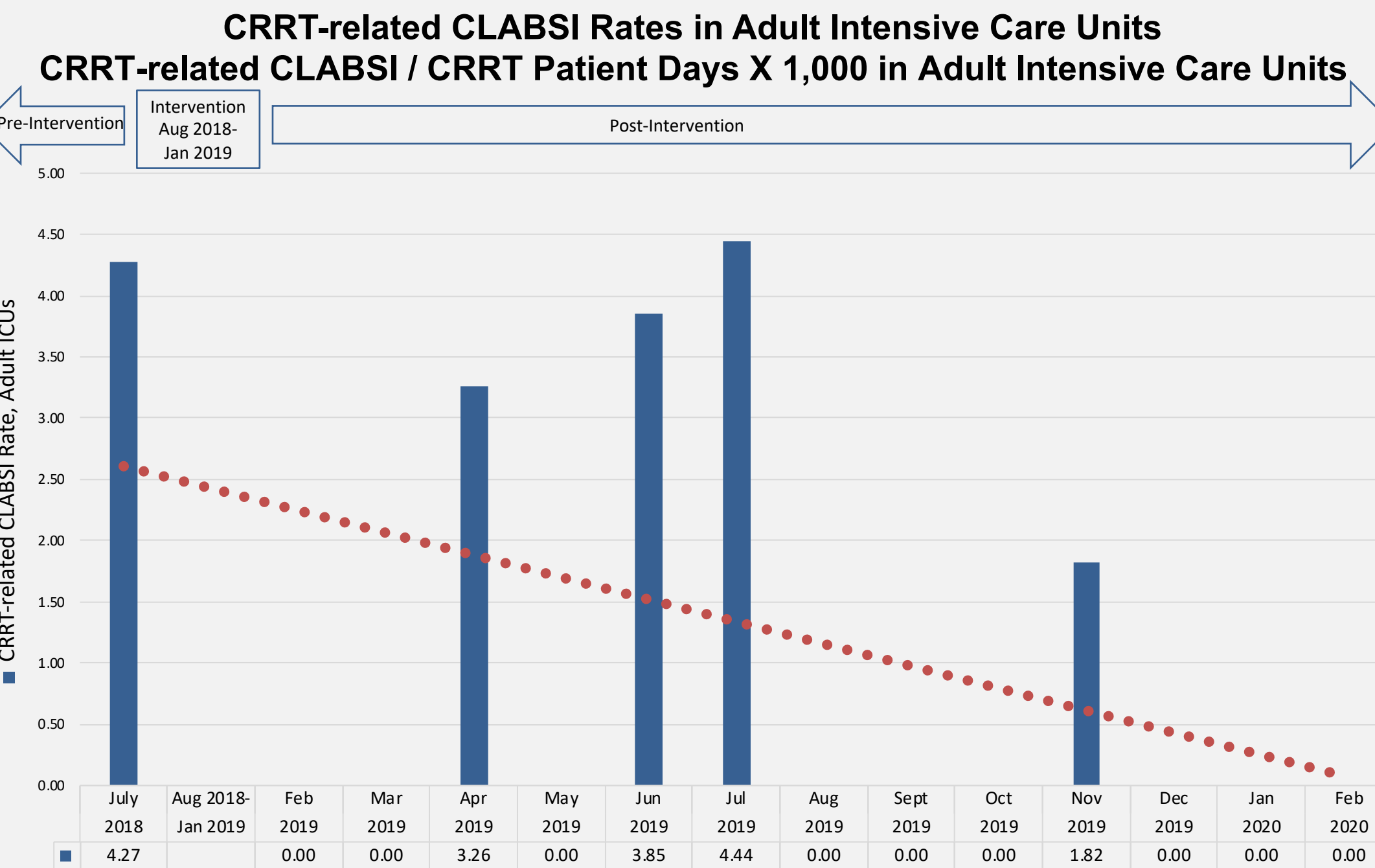


## Quality Impact

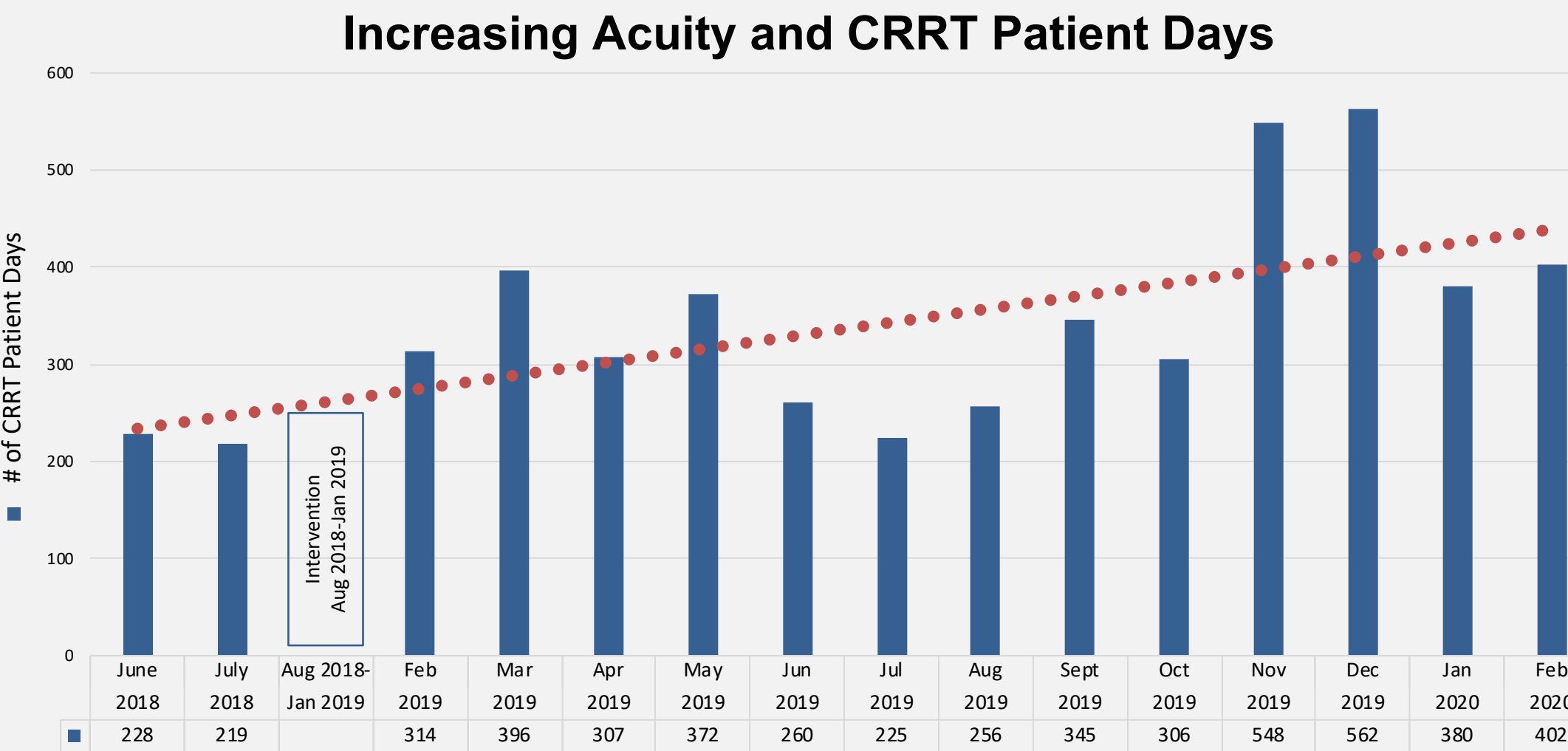
### Follow-up Data Collection & Quality Impact:

- Development and use of standardized weekly auditing tool by designated unit champions to track:
  - Tego™ connector, white Curo™ cap, CRRT machine, and HD central line compliance

**KEY TAKEAWAY:** A just-in-time Tego™ Toolkit and targeted education reduced CRRT-related CLABSIs despite increased acuity and CRRT days.



### Record Breaking Year at VCU in 2019: 87 Liver and 304 Kidney Transplants



\*References available upon request